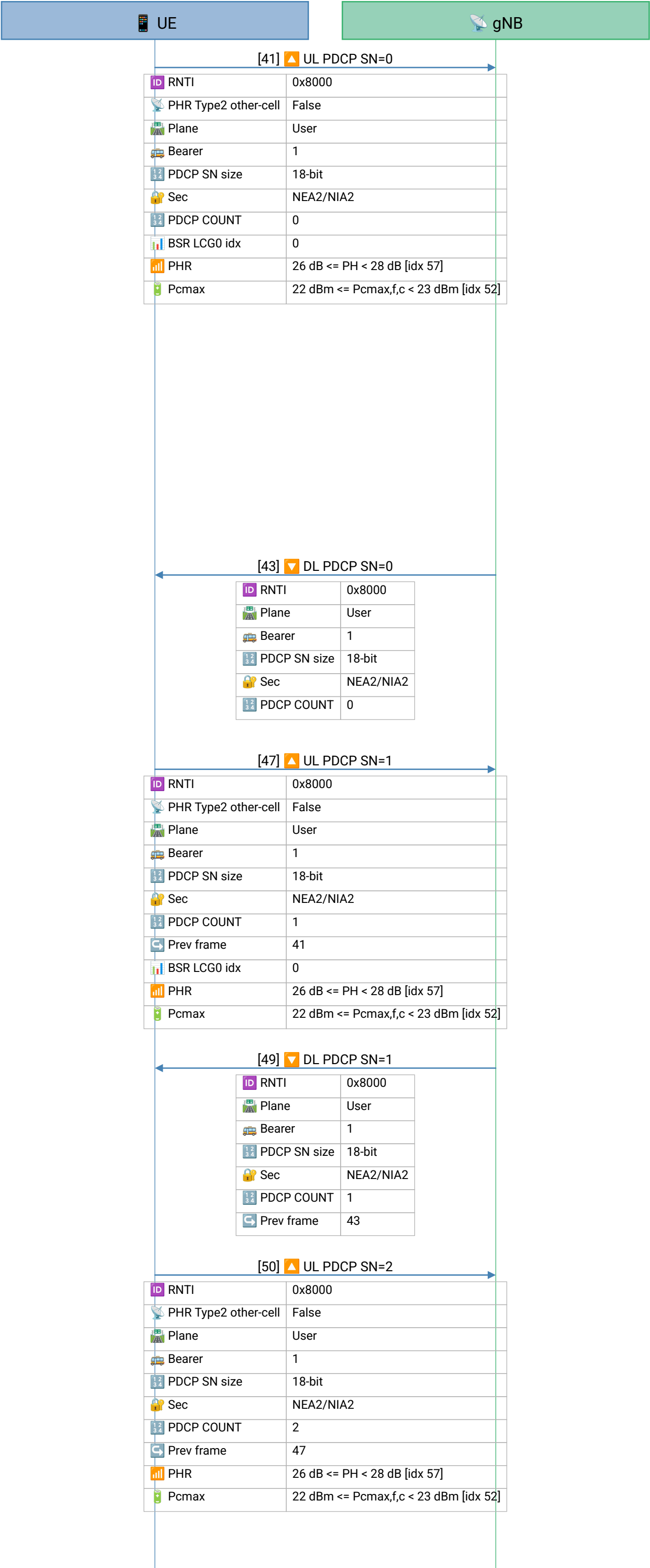
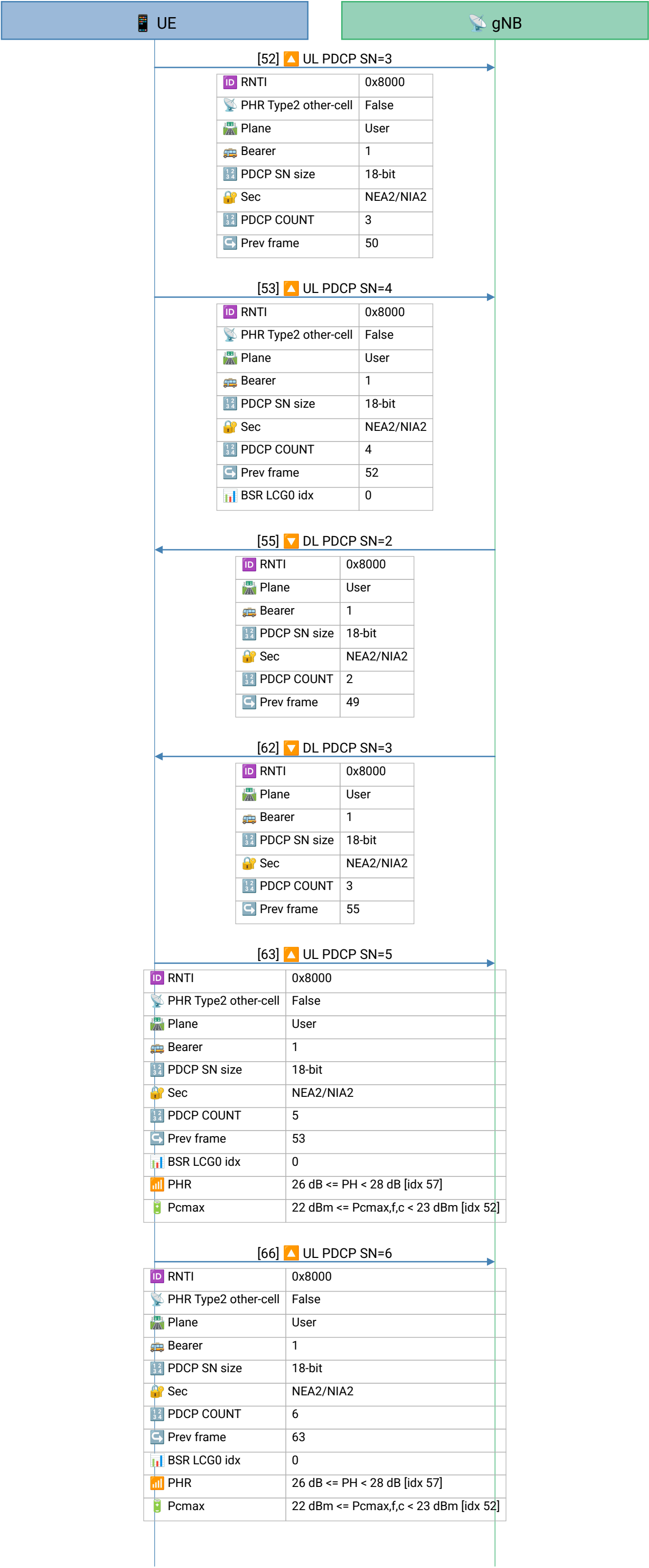
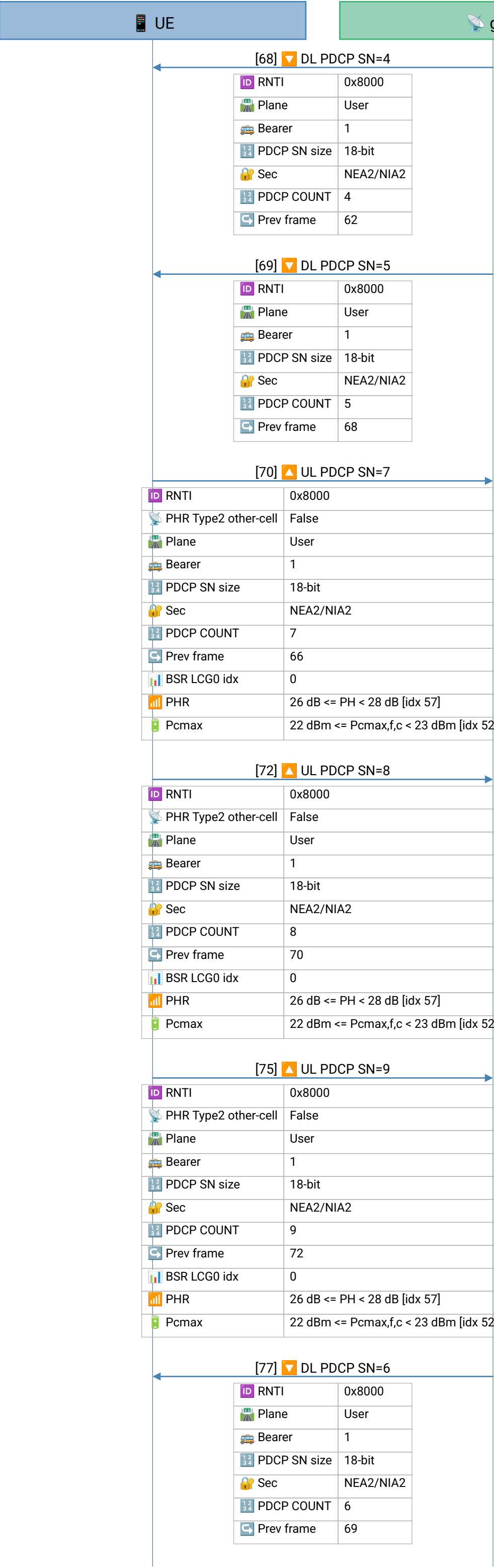








[Frame 68] Downlink SN 4. 63 bytes.

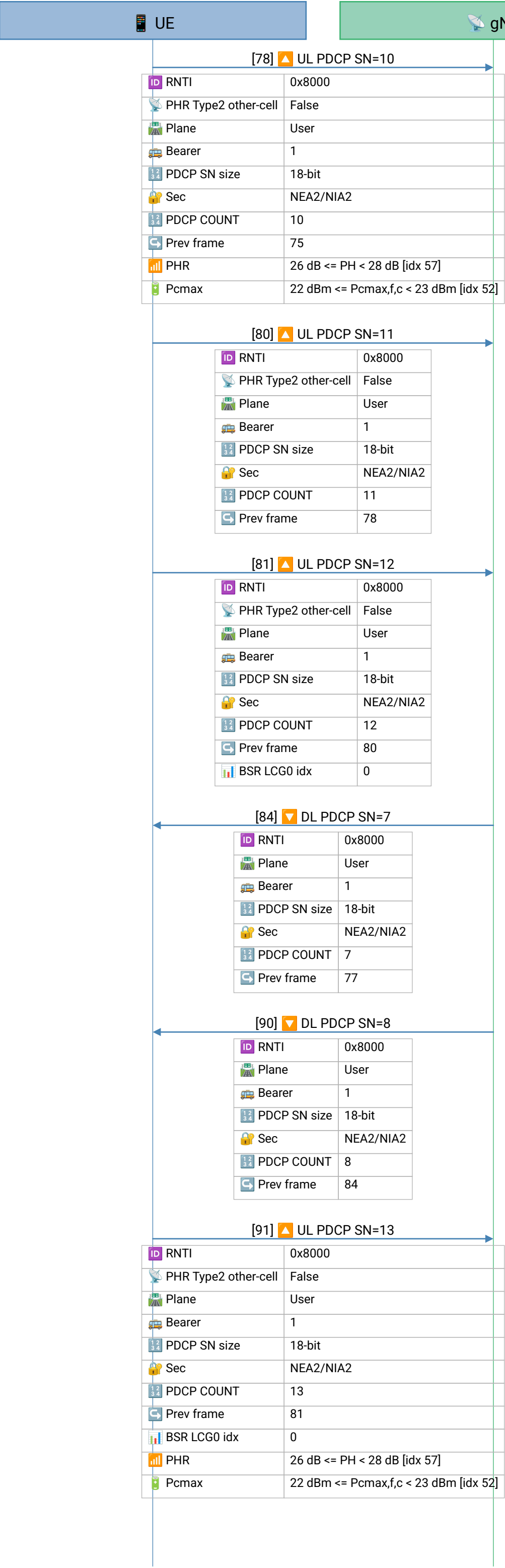
[Frame 69] Downlink SN 5, 0.983 ms after SN 4. Two PDCP PDUs back to back in consecutive frames -- and note that the receiving side is entitled to see them out of order and reorder by sequence number. It never has to here.

[Frame 70] Uplink SN 7. 64 bytes, and the last of the small TCP segments.

[Frame 72] Uplink SN 8, and a third layer of encryption appears inside the PDCP plaintext. 108 bytes. The deciphered payload is no longer TCP: it is IPv6 next header 50 -- ESP, IPsec's Encapsulating Security Payload -- with SPI 0x00000100 . We deciphered the PDCP layer successfully and found more ciphertext underneath, protected by keys that were never on this radio link. It is the same lesson frame 12 of the signaling bearer taught with NAS, in a different place: PDCP protects one hop, and it is not the only thing protecting this traffic. The companion article on decrypting this capture follows that payload the rest of the way.

[Frame 75] Uplink SN 9 after a 1030.999 ms pause. 108 bytes, same SPI. Nothing in the PDCP header changed across a one-second gap.

[Frame 77] Downlink SN 6, 99 bytes, carrying ESP with SPI 0x0000fbeb – a different security association from the uplink's, which is normal for IPsec and has no bearing on PDCP.



[Frame 78] Uplink SN 10, 88 bytes, and the start of the session's largest uplink run. Over the next four frames the counter goes 10, 11, 12, 13 while RLC uses six transmissions to move them.

[Frame 80] Uplink SN 11, reassembled to 1288 bytes. Three RLC segments, one PDCP number.

[Frame 81] Uplink SN 12, reassembled to 988 bytes. Two RLC segments, one PDCP number.

[Frame 84] Downlink SN 7, 87 bytes. The downlink is at 7 while the uplink has reached

12. If you ever need one image for why a merged PDCP timeline would be unreadable, it is this: two counters at different values, on the same bearer, at the same instant, each perfectly correct.

[Frame 90] Downlink SN 8, 1223 bytes -- carried whole. No segmentation at all: the scheduler's grant happened to be large enough. Compare downlink SN 11 at frame 110, which is only slightly larger and gets cut in two. Segmentation is a property of the grant, and PDCP's numbering is unaffected either way.

[Frame 91] Uplink SN 13, 88 bytes.

